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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,160	03/01/2004	Subash Kalbarga	60046.0068US01	9971
7590 Hope Baldauff Hartman, LLC Suite 1010 1720 Peachtree Street., N.W. Atlanta, GA 30309			EXAMINER GUPTA, MUKTESH G	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/790,160

**Applicant(s)**

KALBARGA, SUBASH

**Examiner**

Muktesh G. Gupta

**Art Unit**

2444

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 April 2009.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1 and 3-20 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/IS/C)  
Paper No(s)/Mail Date 02/04/2009 and 05/05/2009  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. **Claim 2** is cancelled.

**Claims 1 and 3-20** have been examined on merits and are pending in this application.

### ***Information Disclosure Statement***

2. An initialed and dated copy of the information disclosure statements (IDS) submitted on 02/04/2009 and 05/05/2009 are being considered by the examiner and signed and dated copy is attached to this office action.

### ***Response to Argument***

3. Applicants arguments regarding cited references not disclose or teach claimed invention in question have been fully considered, but are not persuasive.

Examiner respectfully disagrees with Applicant's argument regarding cited reference: Neufeld does not teach, suggest, or describe a method for communicating with a computer management device including the features recited by Claim 1.

Neufeld discloses each and every feature, aspect of the claimed invention, First communication standard (In-band, on-line, offline), Second communication standard (Out-of-band, on-line, offline). Through In-band communication when managed server is on-line video data is captured, analyzed, compressed, and transmitted to the remote console 5 by circuitry and software in the managed server 2. The transmitted video data is encoded with commands to permit the remote console 5 to interpret the data stream.

The embedded I/O controller 150 provides a plurality of communication interfaces that can be employed to establish out-of-band communication sessions (Second communication standard) with the remote server management controller 116 for the purpose of diagnosing, correcting and/or preventing problems with the managed server 2.

The embedded I/O controller 150 may further include a USB interface 184. IOP 156 of the remote server management controller 116 may establish "virtual USB peripherals" that will be seen and recognized by any USB-aware OS. These virtual peripherals may be presented to any OS to allow communication with the OS in a common, OS-independent manner. Other emulated devices, such as a standard Ethernet controller, are interesting because the USB interface gives the remote management controller 116 a well-defined, hot-plug interface for communication which does not require a specific proprietary device driver. Those of skill in the field will appreciate that USB emulated devices are supported by the system BIOS 36 of the managed server 2 prior to when the OS is booted. Through Out-of-band communication with the remote server management controller 116, various commands are passed on to the Managed server.

"Virtual USB peripherals", such as USB storage devices (such as floppy drives and CD drives) provide additional capability from a remote management point of view because the USB interface 184 allows the remote server management controller 116 to act as a host for hot-pluggable storage devices. This capability allows remote server management controller 116 to mount additional storage volumes to the managed server

2 in an OS-independent fashion. Ideally, the USB storage volumes would reside on an application such as a remote management console, giving the administrator remote CD drive and/or floppy drive functionality. Other emulated devices, such as a standard Ethernet controller, are interesting because the USB interface gives the remote management controller 116 a well-defined, hot-plug interface for communication which does not require a specific proprietary device driver. Those of skill in the field will appreciate that USB emulated devices are supported by the system BIOS 36 of the managed server 2 prior to when the OS is booted. If the OS of the managed server 2 is USB-aware, then it takes up support of the USB devices after boot. The second major functional block of the remote server management controller 116 is the slave instrumentation module 152. The primary purpose of the slave instrumentation module 152 is to provide the hardware infrastructure to implement control and monitoring functions in the managed server 2 as dictated by the IOP 156 in conjunction with dedicated application software such as remote console management software running on a client computer.

Thus it is inherent and well known in the art of networking at the time of invention that Neufeld disclosure does teach that through various commands to the management controller through In-band or out-of-band interface communication Remote Console can manage, configure and control Managed server. As regards to Vendor specific command as disclosed by Applicants disclosure in specification implies what is taught by Neufeld, Powderly and Hoese in their teaching.

Again, it is the Examiner's position that Applicant has not yet submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which distinguishes over the prior art. As it is Applicant's right to continue to claim as broadly as possible their invention. It is also the Examiner's right to continue to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to differentiate in detail how these features are unique.

Applicant has had numerous opportunities to amend the claimed subject matter, and has failed to modify the claim language to distinguish over the prior art of record by clarifying or substantially narrowing the claim language. Thus, Applicant apparently intends that a broad interpretation be given to the claims and the Examiner has adopted such in the present and previous Office action rejections. See *In re Prater and Wei*, 162 USPQ 541 (CCPA 1969), and MPEP 2111.

Applicant employs broad language, which includes the use of word, and phrases, which have broad meanings in the art. In addition, Applicant has not argued any narrower interpretation of the claim language, nor amended the claims significantly enough to construe a narrower meaning to the limitations. As the claims breadth allows multiple interpretations and meanings, which are broader than Applicant's disclosure, the Examiner is forced to interpret the claim limitations as broadly and as reasonably possible, in determining patentability of the disclosed invention.

Thus, Applicant's arguments drawn toward distinction of the claimed invention and the prior art teachings on this point are not considered persuasive and hence Examiner maintains his rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 and 3-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Publication No. 20030226015 to Neufeld et al., (hereinafter "Neufeld"), and in view of U.S. Patent No. 6560641 to Powderly; Terrence W. et al., (hereinafter "Powderly") and further in view of US Patent Publication No. 20040054838 to Hoesel, Geoffrey B. et al., (hereinafter "Hoesel").

***As to Claims 1, 7-9 and 14-16, Neufeld discloses method and system for communicating with a computer management device, computer-readable medium having computer executable instructions stored thereon, the method comprising*** (as stated in par. [0034-0035], par. [0010-0012], Neufeld discloses, managed server (with computer management device) connected and communicating with a remote console by a network, virtually any sort of network capable of transmitting/receiving

(communicating) data between two devices. An important aspect of efficiently managing a large computer network is to maximize the amount of analysis and repair that can be performed remotely (for example, from a centralized administration site). Remote management tools can communicate with a managed server using either (1) in-band communication or (2) out-of-band communication. In-band communication refers to communicating with the server over a standard network connection, such as the managed server's normal Ethernet connection. In-band communication with the server is, accordingly, only possible when the server is able to communicate over its normal network connection. Practically speaking, this limitation restricts in-band communication to times when the OS of the managed server is operational (online). Out-of-band communication, which is not performed across the managed server's normal connection to the network, is a much more powerful tool for server management. In out-of-band communication, a "back door" communication channel is established by a remote server management tool (such as a remote console or terminal emulator) using some other interface with the server (such as (1) through the server's modem, (2) via a direct connection to a serial port, (3) through an infrared communication port, or (4) through an Ethernet interface or the Internet));

*defining, at a host computer managed by the computer management device, one or more vendor specific the vendor specific commands conforming to a first communication standard, wherein the computer management device is operative to receive video output of the host computer and transmit the video output to a remote computer and further operative to receive user input received at and transmitted from*



*the remote computer and provide the user input to the host computer* (as stated in par. [0014-0016], par. [0037], Neufeld discloses, Communications with a managed server may take place in one of these four states: (1) in-band online; (2) in-band offline; (3) out-of-band online; and (4) out-of-band offline. **In-band communication** with the server is, accordingly, only possible when the server is able to communicate over its **normal network connection (first communication standard)**. Remote management solutions combine the advantages of deep information gathering capability that is able to capture the maximum amount of information from a managed server in the maximum range of operational states of the server (software agent-based information gathering technology available when the OS of the managed server is online). Such remote management tools may also include the capability to capture video data and reset sequences from the managed server for remote display or replay at a later time. The capture of video data is facilitated by the close integration of a remote management tool with the managed server and the ability of the **remote management tool to communicate with the managed server** over existing communication links. In the operation of the present technique, video data is captured, analyzed, compressed, and transmitted to the remote console 5 by circuitry and software in the managed server 2 without reliance or interference with the operating system. The remote console 5 includes software for receiving and interpreting the transmitted data to reproduce on its own monitor 8 the video data displayed on the managed server monitor 4. The transmitted video data is **encoded with commands** to permit the remote console 5 to interpret the data stream);

*emulating a device at the management device, the emulated device conforming to a second communication standard* (as stated in par. [0058-0070], Neufeld discloses, **remote server management controller 116** is capable of **independent operation** even if the PCI interface 172 is not operational because of a problem with managed server 2. The **embedded I/O controller 150** provides a **plurality of communication interfaces** that can be employed to establish **out-of-band communication sessions (second communication standard)** with the remote server management controller 116. One such communication interface is a **UART interface module 174**, which is operatively coupled to internal local bus 166. A user may, accordingly, use an **external communication device** to engage in an **out-of-band communication** session with the remote server management controller 116 **via the UART interface 176 or the ICMB interface 178**. The embedded I/O controller 150 may also include an Ethernet interface 180, which is operatively coupled to the internal local bus 166. User may connect remotely to the remote server management controller 116 via the Ethernet interface 180. Such a connection may be made, for example, using a remote console application running on a client computer anywhere on the network that includes managed server 2. The user may, thus, engage in **out-of-band communication** with the **remote server management controller 116** for the purpose of **diagnosing, correcting and/or preventing problems with the managed server 2**. The embedded I/O controller 150 may further include a **USB interface 184**, which is operatively coupled to the internal local bus 166. The USB interface 184 is connected to a **USB host controller** (not shown) via a USB host controller interface 186. In one exemplary embodiment, the USB

interface 184 is connected to one port of a USB host controller (USB bus 24 of FIG. 2), which is typically located in a south bridge 18 portion of the chipset of the managed server 2. When implemented in this way, the IOP 156 of the remote server management controller 116 may establish **"virtual USB peripherals"** that will be seen and recognized by any USB-aware OS. **These virtual peripherals may be presented to any OS to allow communication with the OS in a common, OS-independent manner.** USB storage devices (such as floppy drives and CD drives) provide additional capability from a remote management point of view because the **USB interface 184 allows the remote server management controller 116 to act as a host for hot-pluggable storage devices.** This capability allows remote server management controller 116 to mount additional storage volumes to the managed server 2 in an OS-independent fashion. Ideally, the USB storage volumes would reside on an application such as a remote management console, giving the administrator remote CD drive and/or floppy drive functionality. **Other emulated devices, such as a standard Ethernet controller, are interesting because the USB interface gives the remote management controller 116 a well-defined, hot-plug interface for communication which does not require a specific proprietary device driver.** Those of skill in the field will appreciate that USB emulated devices are supported by the **system BIOS 36** of the managed server 2 prior to when the **OS is booted.** If the OS of the managed server 2 is USB-aware, then it takes up support of the USB devices after boot. The second major functional block of the **remote server management controller 116** is the **slave instrumentation module 152.** The primary purpose of the slave instrumentation

module 152 is to provide the **hardware infrastructure to implement control and monitoring functions** in the managed server 2 as dictated by the IOP 156 in conjunction with **dedicated application software such as remote console management software** running on a client computer. The slave instrumentation module 152 comprises an automatic server recovery ("ASR") controller 188, which **operates to respond automatically to catastrophic failures of the managed server 2**. The ASR-controller 188 is operatively coupled to the internal local bus 166. The ASR controller 188 continually monitors whether the OS of the managed server 2 is operational by controlling a dead-man timer that is periodically serviced by the OS. If the OS of the managed server 2 does not service the dead-man timer within a predetermined time, the **ASR controller 188 resets the processor of the managed server 2 causing the managed server 2 to reboot**. A general purpose input/output module ("GPIO") 189 is provided in the exemplary embodiment of the slave instrumentation module 152. The GPIO provides a **versatile communication interface** that may be used for a wide variety of purposes. The slave instrumentation module 152 also comprises a JTAG master 190. The JTAG master 190 is operatively coupled to the internal local bus 166. The JTAG master 190 comprises a standard JTAG interface 191, which is operatively coupled to a corresponding standard JTAG interface (not shown) on the motherboard of the managed server 2. Through the **JTAG master 190**, the **remote server management controller 116 can perform a wide range of control functions on the managed server 2**. These functions include **updating or repairing**

**the BIOS 36 of the managed server 2 by reprogramming** the non-volatile memory where the BIOS reside);

Neufeld does not explicitly disclose that commands to upgrade BIOS through out-of-band communication are Vendor specific command, but it well known and inherent that these commands to upgrade BIOS are vendor specific commands.

In related networking art, Powderly as stated in col. 2, lines 36-41, also in particular teaches system, method, and adapter card for providing emulation of console of a host computer system from another computer system remotely located on a network, including in particular, remote control of a peripheral device, such as a data storage device, connected to the host computer system over a second communication channel;

*transmitting, from the host computer, the one or more vendor specific commands to the emulated device over a communications link between the host computer and the management device, the communications link conforming to the second communication standard* (as stated in par. [0017], Neufeld discloses a typical remote management system, a user typically, a member of the network management team can initiate an out-of-band session with the dedicated server management computer hosted in the managed server via a remote console application program being executed on a client computer. The management computer could be addressed by the user to control various aspects of the operation of the managed server via control circuitry connected to the embedded server management computer hosted by the managed server);

Powderly, as stated in col. 2, lines 42-52 also teaches host system with adapter card comprises a processor, a network interface controller providing a connection to the network, a peripheral device interface controller to which the peripheral device is connected, a communications client program executing on the processor, and at least one computer-readable medium having stored therein a modified BIOS extension for said peripheral device interface controller. The modified BIOS extension comprises first program code and second program code, the second program code being embedded within the first program code and defining a separate server program;

*receiving the one or more vendor specific commands at the management device* (as stated in par. [0062-0064], Neufeld discloses, users engage in out-of-band communication with the remote server management controller for the purpose of accessing emulated devices, diagnosing, correcting and/or preventing problems with the managed server);

Powderly, as stated in col. 2, lines 52-64 discloses, upon selection by a user at the remote computer system, the modified BIOS extension is loaded into the host memory during execution of the host computer system BIOS, in place of the standard BIOS extension for the peripheral device interface controller. When executed by the host processor, the first program code of the BIOS extension (i) copies the second program code defining the server program to a new location in the host memory, and then (ii) hooks the new location of the server program to an interrupt of the host computer system to cause the host processor to initiate execution of the server program on the host computer system upon a subsequent occurrence of that interrupt;

*determining, at the management device, whether the one or more vendor specific commands are intended for the emulated device* (as stated in par. [0063], Neufeld discloses, users commands interpreted by remote server management controller may establish "virtual USB peripherals" that will be seen recognized and allow communication with any USB-aware OS on managed servers);

Powderly as stated in col. 2, lines 64-67, col. 3, line 1 discloses, server program establishes communications with the communications client program on the adapter card, and, thereafter, upon receipt of requests from the communications client program, invokes functions of the host computer system BIOS to control the peripheral device;

*and in response to determining that the one or more vendor specific commands are not intended for the emulated device, utilizing the received vendor specific commands for communicating with the management device* (as stated in par. [0053], Neufeld discloses, remote server management controller's I/O controller monitors and controls a wide range of conditions in the managed server via the slave instrumentation module and the remote console redirection module);

Powderly, as stated in col. 4, lines 46-54 discloses, When the host system BIOS executes its power-on self-test (POST), it searches for any BIOS extension code provided on any adapter cards connected to its input/output bus. If a BIOS extension is located, the host loads the BIOS extension code into its host memory for execution (a process sometimes referred to as "shadowing"). After executing the BIOS extension code, the system BIOS completes its normal POST execution, which typically concludes with the booting of the host operating system;

*and in response to determining that the one or more vendor specific commands are intended for the emulated device, accessing content from a mass storage device attached to the remote computer, the content from the mass storage device attached to the remote computer redirected from the remote computer to the computer management device* (as stated in par. [0065], Neufeld discloses, USB storage devices (such as floppy drives and CD drives) provide additional capability from a remote management point of view because the USB interface 184 allows the remote server management controller 116 to act as a host for hot-pluggable storage devices. This capability allows remote server management controller 116 to mount additional storage volumes to the managed server 2 in an OS-independent fashion. Ideally, the USB storage volumes would reside on an application such as a remote management console, giving the administrator remote CD drive and/or floppy drive functionality. Other emulated devices, such as a standard Ethernet controller, are interesting because the USB interface gives the remote management controller 116 a well-defined, hot-plug interface for communication which does not require a specific proprietary device driver. USB emulated devices are supported by the system BIOS 36 of the managed server 2 prior to when the OS is booted. If the OS of the managed server 2 is USB-aware, then it takes up support of the USB devices after boot).

Powderly, as stated in col. 18, lines 66-67, col. 19, lines 1-35 discloses, The option available to an Administrator-level user is the Disk Configuration option which supports the peripheral device control functionality of the present invention—in this case, control of a disk drive connected to the peripheral device interface controller 48 (e.g.,



disk 15a or 15b of FIG. 1). Because this option requires that the modified SCSI BIOS extension of the present invention, the user must first access HTML page 110 via the Admin option of page 104 in order to choose to have the modified SCSI BIOS extension loaded and the host computer system then reset. The Select Disk option allows the user to select a storage medium (e.g., disk unit) attached to the SCSI controller 48. As described above, selecting this option will cause the communications\_client\_RPM on the adapter card to send a request to the server program 134 on the host computer system to call the appropriate INT 13 h function to select a particular disk drive. The Partition Disk option allows the user to partition the selected disk unit, again by causing the server program 134 to call the appropriate INT 13 h function to perform that operation. The Copy Bootable Disk Image option allows the user to have a bootable disk image stored on the remote computer system to be copied to the selected disk drive. Again, this is achieved by invoking the appropriate INT 13 h functionality via the communications\_client\_RPM and the server program 134, using the communications buffer established by the server program 134 to transfer the data of the bootable disk image. This option thus allows a remote user to install a new bootable disk image to a disk drive of the host computer system, from which the host computer system can then be rebooted. This is a powerful administrative and maintenance tool;

In related field of endeavor Hoese discloses in Fig. 2, a Fiber Channel high speed serial transport 32 interconnects a plurality of workstations 36 and storage devices 38. A SCSI bus storage transport medium interconnects workstations 40 and storage devices 42. A storage router 44 then serves to interconnect these mediums and

provide devices on either medium global, transparent access to devices on the other medium. Storage router 44 routes requests from initiator devices on one medium to target devices on the other medium and routes data between the target and the initiator. Storage router 44 can allow initiators and targets to be on either side. In this manner, storage router 44 enhances the functionality of Fiber Channel 32 by providing access; for example, to legacy SCSI storage devices on SCSI bus 34. In the embodiment of FIG. 2, the operation of storage router 44 can be managed by a management station 46 connected to the storage router via a direct serial connection. The FC Initiator to SCSI Target mode provides for the basic configuration of a server using Fiber Channel to communicate with SCSI targets. This mode requires that a host system have an FC attached device and associated device drivers and software to generate SCSI-3 FCP requests. This system acts as an initiator using the storage router to communicate with SCSI target devices. The SCSI devices supported can include SCSI-2 compliant direct or sequential access (disk or tape) devices. The storage router serves to translate command and status information and transfer data between SCSI-3 FCP and SCSI-2, allowing the use of standard SCSI-2 devices in a Fiber Channel environment. User configuration of the storage router will be needed to support various functional modes of operation. Configuration can be modified, for example, through a serial port or through an Ethernet port via SNMP (simple network management protocol) or a Telnet session. Specifically, SNMP manageability can be provided via an 802.3 Ethernet interface. This can provide for configuration changes as well as providing statistics and error information. Configuration can also be performed via TELNET or RS-232 interfaces with

menu driven command interfaces. Configuration information can be stored in a segment of flash memory and can be retained across resets and power off cycles. Password protection can also be provided. Management commands are those intended to be processed by the storage router controller directly. This may include diagnostic, mode, and log commands as well as other vendor-specific commands. These commands can be received and processed by both the FCP and SCSI interfaces, but are not typically bridged to the opposite interface, as stated in par. 0018, par. 0028, par. 0035 and par. 0038.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Neufeld's remote server management controller, which is a PCI bus card connected to North bridge I/O bridge to SCSI controller to incorporate Powderly's Adapter card, also a PCI card with Peripheral Device Interface Controller. The adapter card further comprises a peripheral device interface controller to which peripheral devices can be connected and through which the host computer system can access the peripheral devices. In another embodiment, the peripheral device interface controller 48 comprises a Small Computer Systems Interface (SCSI) controller. Neufeld and Powderly both disclose SCSI controllers to which SCSI peripheral devices can be connected for remote emulation of host systems and its attached peripherals control in absence of Host operating system through first and second communication standard.

Neufeld and Powderly disclose SCSI devices control, but do not specifically disclose Vendor Specific commands for controlling of SCSI devices. In related field on endeavor Hoese does disclose Management commands intended to be processed by

the storage router controller directly which may include diagnostic, mode, and log commands as well as other vendor-specific commands. These commands can be received and processed by SCSI interfaces or SCSI controllers Adapter cards.

Neufeld, Powderly and Hoese reference disclose SCSI controller and Interfaces; Hoese further discloses Vendor Specific commands for controlling the attached SCSI devices. Since all the three references are in same field of controlling SCSI devices, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine these references.

The motivation would have been for guaranteed control and emulation of Host or Managed servers through in-band communication or out-of-band communication i.e., First and Second communication standards. An important aspect of efficiently managing a large computer network is to maximize the amount of analysis and repair that can be performed remotely. Remote management tools can communicate with a managed server using either (1) in-band communication or (2) out-of-band communication. In-band communication refers to communicating with the server over a standard network connection, such as the managed server's normal Ethernet connection. Out-of-band communication, which is not performed across the managed server's normal connection to the network, is a much more powerful tool for server management. In out-of-band communication, a "back door" communication channel is established by a remote server management tool (such as a remote console or terminal emulator) using other interface with the server (such as (1) through the server's modem, (2) via a direct connection to a

serial port, (3) through an infrared communication port, or (4) through an Ethernet interface or the Internet).

Therefore, it would have been obvious to combine these references of Neufeld's, Powderly's and Hoese's disclosure in light of guaranteed communication control for various types of device with different device interfaces.

***As to Claims 3, 12 and 19, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein utilizing the received vendor specific commands for communicating with the management device in response to determining that the one or more vendor specific commands are not intended for the emulated device comprises utilizing data contained in the received vendor specific commands to configure the management device (as stated in par. [0053], Neufeld discloses, specific commands from users to remote server management controller's are processed by an independent computer system's embedded I/O controller which includes an Input/Output processor ("IOP"), and provides general control and functions as a management processor for the remote server management controller configuration and management.***

Powderly also discloses administrative, configuration and control function choices are presented to the user as HyperText Markup Language (HTML) pages that the Web server serves to the remote client program, on implementation of program code that the processor 26 executes. The program code is preferably stored in flash memory 38. The first of these processes comprises a Web server that enables a user to interact with the adapter card 18 from the remote client program for purposes of

administration, configuration and control of the adapter card 18, as stated in col. 8, lines 23-26, and lines 18-23.

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

***As to Claim 4, Neufeld anticipates method of Claim 3, wherein utilizing data contained in the received vendor specific commands to configure the management device comprises***

*setting a network address of the management device based upon contents of the received vendor specific commands* (as stated in par. [0059], Neufeld discloses, embedded I/O controller provides a plurality of communication interfaces that can be employed to establish out-of-band communication sessions with the remote server management controller. Users may connect remotely to the remote server management controller via the communication interface is a UART interface module 174, which is operatively coupled to internal local bus 166. The exemplary UART interface module 174 comprises two standard 16550 UARTs, each of which may provide a separate serial communication interface. Both UARTs are mapped into the address space of the IOP 156 and can be accessed via the PCI bus 172 or by the IOP 156. Either UART may be implemented so that it can be reset through a control register in the address space of the IOP 156).

Powderly also teaches selecting the Update Software option invokes a procedure in the config\_RPM on the adapter card 18 that allows the user to transfer new software

(i.e., program code) to the adapter card 18 in order to, for example, upgrade the software on the adapter card 18. The Configure Board option brings up an additional HTML page 112 that provides certain configuration options, such as, for example, the ability to set the IP address of the adapter card 18. As illustrated, that option would invoke a procedure in the config\_RPM on the adapter card 18 which would store the new IP address in the appropriate location on the adapter card 18, as stated in col. 18, lines 16-27.

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

***As to Claims 5, 13 and 20, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein utilizing the received vendor specific commands for communicating with the management device in response to determining that the one or more vendor specific commands are not intended for the emulated device comprises:***

*determining coordinates of a user input cursor on the remote computer (as stated in par. [0048], Neufeld discloses, In the operation of the remote management controller, the I/O processor periodically reads the video graphics data from the frame buffer to determine cursor coordinates and whether the data has changed);*

*and returning the coordinates to the host computer in response to the received vendor specific commands (as stated in par. [0048], Neufeld discloses, if the data has changed, the I/O processor will compress the video graphics data and transmit the data to the remote console via one of the communications devices, modem or NIC. The*

remote console will decompress and decode the data stream and display it at the remote console for viewing by the user and vice-versa).

Powderly also teaches, second process that the processor 26 runs is a VG\_remoter ( ) process. This process is responsible for determining changes in the representation of the console screen (generated by the graphics controller 22 in responses to commands from the host computer system 14) packaging information representing those changes into TCP/IP segments, and sending the TCP/IP segments to the remote client program. The VGA\_remoter( ) process is additionally responsible for receiving keystroke and mouse movement information from the remote client, converting that information into keyboard/mouse controller queue entries, and then placing those entries into the keyboard/mouse controller 46 of the host computer system 14, as stated in col. 8, lines 26-38.

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

***As to Claims 6, 10-11 and 17-18, Neufeld anticipates method and system of Claims 1, 9 and 16, wherein the first communication standard comprises the SCSI standard, the second communication standard comprises the USB standard, and wherein the emulated device comprises a USB mass storage device (as stated in par. [0062-0065], Neufeld discloses, wide range of USB devices and virtual USB peripherals could be emulated by the input output processor of the remote server management controller via the USB interface, RS-232 interface, USB Ethernet controllers and SCSI***



controllers. USB storage devices floppy drives and CD drives provide additional capability from a remote management point of view because the USB interface allows the remote server management controller to act as a host for hot-pluggable storage devices. This capability allows remote server management controller to mount additional storage volumes to the managed server in an OS-independent fashion).

Powderly also teaches, the server program is executing on the host processor 50, and because the host system BIOS 51 completes its normal execution, all of the callable functions of the system BIOS (invoked using the INT instruction), such as the keyboard services (INT 16 h), video services (INT 10 h), disk services (INT 13 h), serial communications services (INT 14 h), system services (INT 15 h), parallel printer services (INT 17 h), and others can be invoked by the server program 134. Thus, this aspect of the present invention provides a means to invoke the functionality of the host system BIOS via the communications between the communications client 140 on the adapter card 18 and the server program 134 on the host computer system 14. For example, to request the server program 134 to make a particular call to a system BIOS function, the communications client 140 can pass a pre-defined op-code for that function to the server program 134, along with any parameters required to carry out the function. The server program 134 can be coded to recognize the pre-defined op-code and to make the appropriate call to the desired system BIOS function. Any results can then be reported back to the communications client 140. , as stated in col. 11, lines 3-24).

Powderly also teaches, In the preferred embodiment, the peripheral device interface controller 48 comprises a Small Computer Systems Interface (SCSI) controller implemented, as stated in col. 10, lines 3-5.

Examiner uses same rational as of preceding Claims to combine the references of Neufeld's and Powderly's disclosures.

#### **Action Final**

5. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### **Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muktesh G. Gupta whose telephone number is 571-270-

5011. The examiner can normally be reached on Monday-Friday, 8:00 a.m. -5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MG

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2451